

September 15, 2016

Tom Moe
USS Corporation
P.O. Box 417
8771 Park Ridge Dr
Mountain Iron, MN 55768

RE: Project: NPDES-TB Wk1
Pace Project No.: 1274188

Dear Tom Moe:

Enclosed are the analytical results for sample(s) received by the laboratory on September 07, 2016. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Melisa M Woods
melisa.woods@pacelabs.com
Project Manager

Enclosures

cc: Cory Hertling
Terri Sabetti, NTS



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: NPDES-TB Wk1

Pace Project No.: 1274188

Virginia Minnesota Certification ID's

315 Chestnut Street, Virginia, MN 55792

Alaska Certification #MN01084

Arizona Department of Health Certification #AZ0785

Minnesota Dept of Health Certification #: 027-137-445

North Dakota Certification: # R-203

Wisconsin DNR Certification # : 998027470

WA Department of Ecology Lab ID# C1007

Nevada DNR #MN010842015-1

Oklahoma Department of Environmental Quality

Duluth Minnesota Certification ID's

4730 Oneota St., Duluth, MN 55807

Minnesota Dept of Health Certification #: 027-137-152

Wisconsin DNR Certification # : 999446800

North Dakota Certification #: R-105

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: NPDES-TB Wk1

Pace Project No.: 1274188

Lab ID	Sample ID	Matrix	Date Collected	Date Received
1274188001	SD 001 (Seep 020)	Water	09/07/16 11:20	09/07/16 14:05

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SAMPLE ANALYTE COUNT

Project: NPDES-TB Wk1

Pace Project No.: 1274188

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
1274188001	SD 001 (Seep 020)	EPA 1664A TPH (1999)	DES	1	PASI-DUL
		USGS I-3765	BEM	1	PASI-V
		EPA 300.0	DMB	1	PASI-V

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: NPDES-TB Wk1

Pace Project No.: 1274188

Sample: SD 001 (Seep 020)		Lab ID: 1274188001		Collected: 09/07/16 11:20		Received: 09/07/16 14:05		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
1664 SGT-HEM, TPH									
Analytical Method: EPA 1664A TPH (1999)									
Total Petroleum Hydrocarbons	ND	mg/L	3.1	1.1	1		09/12/16 13:27		
USGS I-3765 TSS									
Analytical Method: USGS I-3765									
Total Suspended Solids	1.6	mg/L	1.0	1.0	1		09/13/16 13:28		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Sulfate	942	mg/L	20.0	10.0	10		09/13/16 22:24	14808-79-8	

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QUALITY CONTROL DATA

Project: NPDES-TB Wk1

Pace Project No.: 1274188

QC Batch:	93809	Analysis Method:	EPA 1664A TPH (1999)
QC Batch Method:	EPA 1664A TPH (1999)	Analysis Description:	1664 SGT-HEM, TPH
Associated Lab Samples:	1274188001		

METHOD BLANK: 369197 Matrix: Water

Associated Lab Samples: 1274188001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Petroleum Hydrocarbons	mg/L	ND	3.0	1.0	09/12/16 10:21	

LABORATORY CONTROL SAMPLE: 369198

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Petroleum Hydrocarbons	mg/L	20	17.9	90	64-132	

MATRIX SPIKE SAMPLE: 369199

Parameter	Units	1274082001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Total Petroleum Hydrocarbons	mg/L	<1.1	20.4	17.4	83	64-132	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

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QUALITY CONTROL DATA

Project: NPDES-TB Wk1

Pace Project No.: 1274188

QC Batch: 93989

Analysis Method: USGS I-3765

QC Batch Method: USGS I-3765

Analysis Description: USGS I-3765 Total Suspended Solids

Associated Lab Samples: 1274188001

METHOD BLANK: 369905

Matrix: Water

Associated Lab Samples: 1274188001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Suspended Solids	mg/L	ND	1.0	1.0	09/13/16 13:28	

LABORATORY CONTROL SAMPLE: 369906

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Suspended Solids	mg/L	239	216	90	80-120	

SAMPLE DUPLICATE: 369907

Parameter	Units	1274317001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	118	112	5	10	

SAMPLE DUPLICATE: 369908

Parameter	Units	1274398002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	26.7	23.3	13	10	D6

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

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QUALITY CONTROL DATA

Project: NPDES-TB Wk1

Pace Project No.: 1274188

QC Batch: 93974

Analysis Method: EPA 300.0

QC Batch Method: EPA 300.0

Analysis Description: 300.0 IC Anions

Associated Lab Samples: 1274188001

METHOD BLANK: 369855

Matrix: Water

Associated Lab Samples: 1274188001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfate	mg/L	ND	2.0	1.0	09/13/16 13:32	

LABORATORY CONTROL SAMPLE: 369856

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfate	mg/L	50	50.8	102	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 369857 369858

Parameter	Units	1274628001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Sulfate	mg/L		50	50	92.0	92.6	101	102	90-110	1	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 369862 369863

Parameter	Units	1274462001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Sulfate	mg/L	ND	50	50	48.2	48.2	95	95	90-110	0	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: NPDES-TB Wk1

Pace Project No.: 1274188

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-DUL Pace Analytical Services - Duluth

PASI-V Pace Analytical Services - Virginia

ANALYTE QUALIFIERS

D6 The precision between the sample and sample duplicate exceeded laboratory control limits.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: NPDES-TB Wk1

Pace Project No.: 1274188

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
1274188001	SD 001 (Seep 020)	EPA 1664A TPH (1999)	93809		
1274188001	SD 001 (Seep 020)	USGS I-3765	93989		
1274188001	SD 001 (Seep 020)	EPA 300.0	93974		

REPORT OF LABORATORY ANALYSIS

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CHAIN-OF-CUSTODY / Analytical

The Chain-of-Custody is a LEGAL DOCUMENT

MO# : 1274188

PM: MMW Due Date: 09/21/16
CLIENT: USS CORP


Of 1



Section A Required Client Information:		Section B Required Project Information:		Section C Invoice Information:	
Company: USS Corporation	Report To: Tom Moe	Attention:	Address:	Company Name:	
Address: P O Box 417	Copy To:				
City: MN 55768					
Email:					
Phone:	Fax:	Purchase Order #:	Project Name:	NPDES-TB WK1	Page Quote:
Requested Due Date:		Project #:			Page Profile #:
					heather.zika@pacelabs.com

ITEM #	MATRIX	CODE	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED		SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives						Analyses Test	Y/N	Requested Analysis Filtered (Y/N)	Residual Chlorine (Y/N)	State / Location	Agency
					DATE	TIME			Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol					
1	SD 001 (Seep 120)	WT	9/7/16 11:20	9/7/16 11:20																
2																				
3																				
4																				
5																				
6																				
7																				
8																				
9																				
10																				
11																				
12																				

SAMPLER NAME AND SIGNATURE		DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
PRINT Name of SAMPLER:	Signature	9/7/16	14:05	TSJ	9-7-16	14:05	2.7 Y N Y
SIGNATURE of SAMPLER:	Signature						
DATE Signed: 9-7-16		TEMP in C					
		Received on Ice (Y/N)					
		Custody Sealed Cooler (Y/N)					
		Samples Intact (Y/N)					

	Document Name:	Document Revised: 23Feb2015
	Sample Condition Upon Receipt Form	Page 1 of 1
	Document No.: F-VM-C-001-Rev.09	Issuing Authority: Pace Virginia, Minnesota Quality Office

Sample Condition
Upon Receipt

Client Name:

Project #:

WO#: 1274188



Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☒ Client
☐ Commercial ☐ Pace ☐ Other:

Tracking Number:

Custody Seal on Cooler/Box Present? ☐ Yes ☒ No Seals Intact? ☒ Yes ☐ No Optional: Proj. Due Date: Proj. Name:

Packing Material: ☐ Bubble Wrap ☐ Bubble Bags ☐ None ☒ Other: Temp Blank? ☒ Yes ☐ No

Thermometer Used: ☒ 140792808 Type of Ice: ☐ Wet ☐ Blue ☐ None ☒ Samples on ice, cooling process has begun

Cooler Temp Read °C: 2.4 Cooler Temp Corrected °C: 2.7 Biological Tissue Frozen? ☐ Yes ☐ No ☒ NA
Temp should be above freezing to 6°C Correction Factor: +0.3 Date and Initials of Person Examining Contents: Tracy BO 9-2-16

Comments:

Chain of Custody Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1.
Chain of Custody Filled Out?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2.
Chain of Custody Relinquished?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.
Sampler Name and Signature on COC?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	4.
Samples Arrived within Hold Time?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	5.
Short Hold Time Analysis (<72 hr)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	6.
Rush Turn Around Time Requested?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	7.
Sufficient Volume?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	8.
Correct Containers Used?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	9.
-Pace Containers Used?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Containers Intact?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	10.
Filtered Volume Received for Dissolved Tests?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	11. Note if sediment is visible in the dissolved containers.
Sample Labels Match COC?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	12.
-Includes Date/Time/ID/Analysis Matrix:		
All containers needing acid/base preservation will be checked and documented in the pH logbook.	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	See pH log for results and additional preservation documentation
Headspace in Methyl Mercury Container	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	13.
Headspace in VOA Vials (>6mm)?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	14.
Trip Blank Present?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	15.
Trip Blank Custody Seals Present?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Pace Trip Blank Lot # (if purchased):		

CLIENT NOTIFICATION/RESOLUTION

Field Data Required? ☐ Yes ☐ No

Person Contacted: Date/Time:

Comments/Resolution:

FECAL WAIVER ON FILE Y N

TEMPERATURE WAIVER ON FILE Y N

Project Manager Review: Melina Woods

Date: 9/9/16

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Page 12 of 14
hold, incorrect preservative, out of temp, incorrect containers)

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www.faceanalytics.com

Face Analytics


Due Date: 9/21/2016

Requested Analysis

Pace Analytical Duluth
4730 Oneota Street
Duluth, MN 55807
Phone (218) 727-6380

Preserved Containers

***In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document. This chain of custody is considered complete as is since this information is available in the owner laboratory.

	Document Name: Sample Condition Upon Receipt Form	Document Revised: 22Jan2016 Page 1 of 1
	Document No.: F-DUL-C-001-Rev.01	Issuing Authority: Pace Virginia, Minnesota Quality Office

**Sample Condition
Upon Receipt**

Client Name:

Project #:

12 COC from VM

Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☐ Client
☐ Commercial ☒ Pace ☐ Other: _____

Tracking Number: _____

Custody Seal on Cooler/Box Present? ☒ Yes ☐ No Seals Intact? ☒ Yes ☐ No

Optional: Proj. Due Date: _____ Proj. Name: _____

Packing Material: ☐ Bubble Wrap ☒ Bubble Bags ☐ None ☐ Other: _____ Temp Blank? ☒ Yes ☐ No

Thermometer Used: ☒ B00051 Type of Ice: ☒ Wet ☐ Blue ☐ None ☒ Samples on ice, cooling process has begun

Cooler Temp Read °C: 2.0 Cooler Temp Corrected °C: 1.2 Biological Tissue Frozen? ☐ Yes ☐ No ☒ N/A

Temp should be above freezing to 6°C Correction Factor: -0.8 °C Date and Initials of Person Examining Contents: 9/8/16 krp

Comments:

Chain of Custody Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1.
Chain of Custody Filled Out?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2.
Chain of Custody Relinquished?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.
Sampler Name and Signature on COC?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	4.
Samples Arrived within Hold Time?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	5.
Short Hold Time Analysis (<72 hr)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	6.
Rush Turn Around Time Requested?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	7.
Sufficient Volume?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	8.
Correct Containers Used?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	9.
-Pace Containers Used?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Containers Intact?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	10.
Filtered Volume Received for Dissolved Tests?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	11. Note if sediment is visible in the dissolved containers.
Sample Labels Match COC?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	12.
-Includes Date/Time/ID/Analysis Matrix: <u>WT</u>		
All containers needing acid/base preservation will be checked and documented in the pH logbook.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	See pH log for results and additional preservation documentation
Headspace in Methyl Mercury Container	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	13.
Headspace in VOA Vials (>6mm)?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	14.
Trip Blank Present?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	15.
Trip Blank Custody Seals Present?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Pace Trip Blank Lot # (if purchased):		

CLIENT NOTIFICATION/RESOLUTION

Field Data Required? ☐ Yes ☐ No

Person Contacted: _____ Date/Time: _____

Comments/Resolution: _____

FECAL WAIVER ON FILE Y N

TEMPERATURE WAIVER ON FILE Y N

Project Manager Review:

AP for

LMF

Date:

9-9-16

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers)